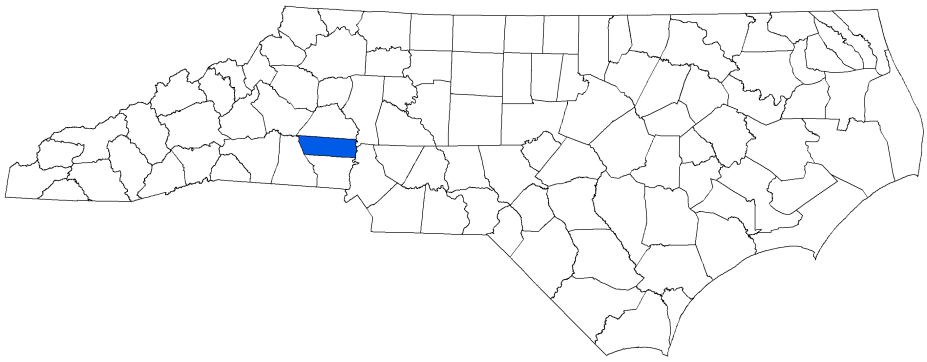
ANNUAL REPORT FOR 2009



Indian Creek Mitigation Site
Lincoln County
TIP No. R-0617BA

Prepared By:
Natural Environment Unit & Roadside Environmental Unit
North Carolina Department of Transportation
December 2009

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SUMMARY

The following report summarizes the monitoring activities that have occurred in the past year at the Indian Creek Mitigation Site. Site construction began in February 2005 and was completed within the same month. Monitoring activities in 2009 represent the fifth year of monitoring for the site. The site must demonstrate vegetation success for a minimum of five years or until the site is deemed successful.

In a letter dated December 18, 2008 NCDOT recommended discontinuing monitoring of the wetland creation on the Indian Creek Mitigation Site. The wetland creation had failed to meet the hydraulic monitoring requirements during the four years of monitoring. The elevations on the site have been verified and are either at the adjacent wetland elevation or lower. It has been determined by NCDOT NEU staff that the incision of Indian Creek is creating a drawdown of the groundwater in the creation area. The 2008 monitoring report stated that the creation area would be abandoned, and listed the amount and types of credit available to offset the 0.64 acres of wetland impacts associated with R-0617BA.

In a letter to the Regulatory Agencies on March 9, 2009, NCDOT proposed closeout of the Creation area. Therefore, no hydrologic monitoring or vegetation data for the creation area is included in the 2009 monitoring report; however photos were taken of the buffer areas. The trees in the Riparian Buffer Restoration and the Upland Buffer Enhancement are surviving along with other volunteer species. NCDOT proposes to discontinue all monitoring activities at the Indian Creek Mitigation Site.

1.0 INTRODUCTION

1.1 Project Description

The Indian Creek Mitigation Site is located on Pleasant Union Church Road, south of Lincolnton and just north of the town of Crouse. The site is adjacent to Indian Creek in Lincoln County (Figure 1). NCDOT is using onsite mitigation at the Indian Creek Site to offset impacts to existing wetlands and streams from the construction of NC 150 in Lincoln County.

The Indian Creek Site consists of approximately 20.0 acres of wetland creation, enhancement, and preservation; stream enhancement (with riparian buffer restoration and enhancement), and uplands enhancement and preservation.

Headwater wetlands were created through minor grading of deforested uplands (0.6 acre). Wetland enhancement consisted of planting approximately 0.9 acre of existing emergent wetland and wetland preservation included protecting approximately 6.2 acres of headwater and scrub-shrub wetlands. Stream enhancement was performed on approximately 1,280 feet of channel and included 480 feet of buffer restoration and 800 feet of buffer preservation (3.0 acres total). An upland area (6.4 acres) was enhanced through planting while another 4.4 acres of upland were preserved.

1.2 Purpose

In order to demonstrate successful mitigation, hydrologic and vegetative monitoring must be conducted for a minimum of five consecutive years. Success criteria for vegetation monitoring is based on the approved mitigation plan dated August 2002. The following report details the results of the vegetative monitoring activities that were performed during the 2009 growing season at the Indian Creek Mitigation Site.

1.3 Project History

February 2005	Site Planted
March-November 2005	Hydrology Monitoring (Year 1)
July 2005	Vegetation Monitoring (Year 1)
March-November 2006	Hydrology Monitoring (Year 2)
July 2006	Vegetation Monitoring (Year 2)
March-November 2007	Hydrology Monitoring (Year 3)
August 2007	Vegetation Monitoring (Year 3)
March-November 2008	Hydrology Monitoring (Year 4)
August 2008	Vegetation Monitoring (Year 4)
December 2008	Wetland Creation Area Abandoned
August 2009	Vegetation Monitoring (Year 5)

Figure 1. Site Location Map

2.0 VEGETATION: INDIAN CREEK MITIGATION SITE (YEAR 5 MONITORING)

2.1 Success Criteria

Success criteria have been established to verify that wetland creation areas support the vegetation necessary for a jurisdictional determination. Additional success criteria are dependent upon the density and growth of characteristic forest species. For the forested wetlands, a minimum count of 320 trees per acre must be achieved within three years of the initial planting with a minimum count of 260 trees per acre within five years of initial planting.

Stream mitigation monitoring will follow Monitoring Level 2 for the enhancement section and Monitoring Level 3 for the preservation section as found in the April 2003 Stream Mitigation Guidelines of the US Army Corps of Engineers, Wilmington District. Annual monitoring reports will be provided to the Asheville Regulatory Field Office and the site will be preserved in perpetuity.

2.2 Description of Species

The following tree species were planted in the Buffer, Creation, and Enhancement Areas:

Betula nigra, River Birch

Fraxinus pennsylvanica, Green Ash

Quercus nigra, Water Oak

Quercus phellos, Willow Oak

Platanus occidentalis, Sycamore

Quercus alba, White Oak

The following tree species were planted in the Upland Area:

Quercus alba, White Oak

Quercus phellos, Willow Oak

Liriodendron tulipifera, Tulip Poplar

Juglans nigra, Black Walnut

Prunus serotina, Black Cherry

2.3 Results of Vegetation Monitoring

The vegetation plot in the Creation area was not evaluated in 2009, as stated in the March 9, 2009 close out letter sent to the Regulatory Agencies but photos were taken of the buffer areas. The trees in the Riparian Buffer Restoration and the Upland Buffer Enhancement are surviving along with other volunteer species. The trees noted surviving within these areas consisted of river birch, green ash, water oak, willow oak, sweetgum, and red maple. There was no ATV or vehicle activity noted on the site at the time of monitoring as noted in previous monitoring years.

2.4 Conclusions

The Riparian Buffer Restoration and the Upland Buffer Enhancement are well vegetated with a variety of hardwood species. NCDOT proposes to discontinue vegetation monitoring at the Indian Creek Mitigation Site

3.0 OVERALL CONCLUSIONS/ RECOMMENDATIONS

In a letter to the Regulatory Agencies on March 9, 2009, NCDOT proposed closeout of the Creation area. Therefore, no hydrologic monitoring or vegetation data for the creation area is included in the 2009 monitoring report; however photos were taken of the buffer areas. The trees in the Riparian Buffer Restoration and the Upland Buffer Enhancement are surviving along with other volunteer species.

NCDOT proposes to discontinue all monitoring activities at the Indian Creek Mitigation Site.

APPENDIX A

SITE PHOTOGRAPHS AND

PHOTO AND MONITORING PLOT LOCATIONS

Indian Creek

Photo 1

Photo 2

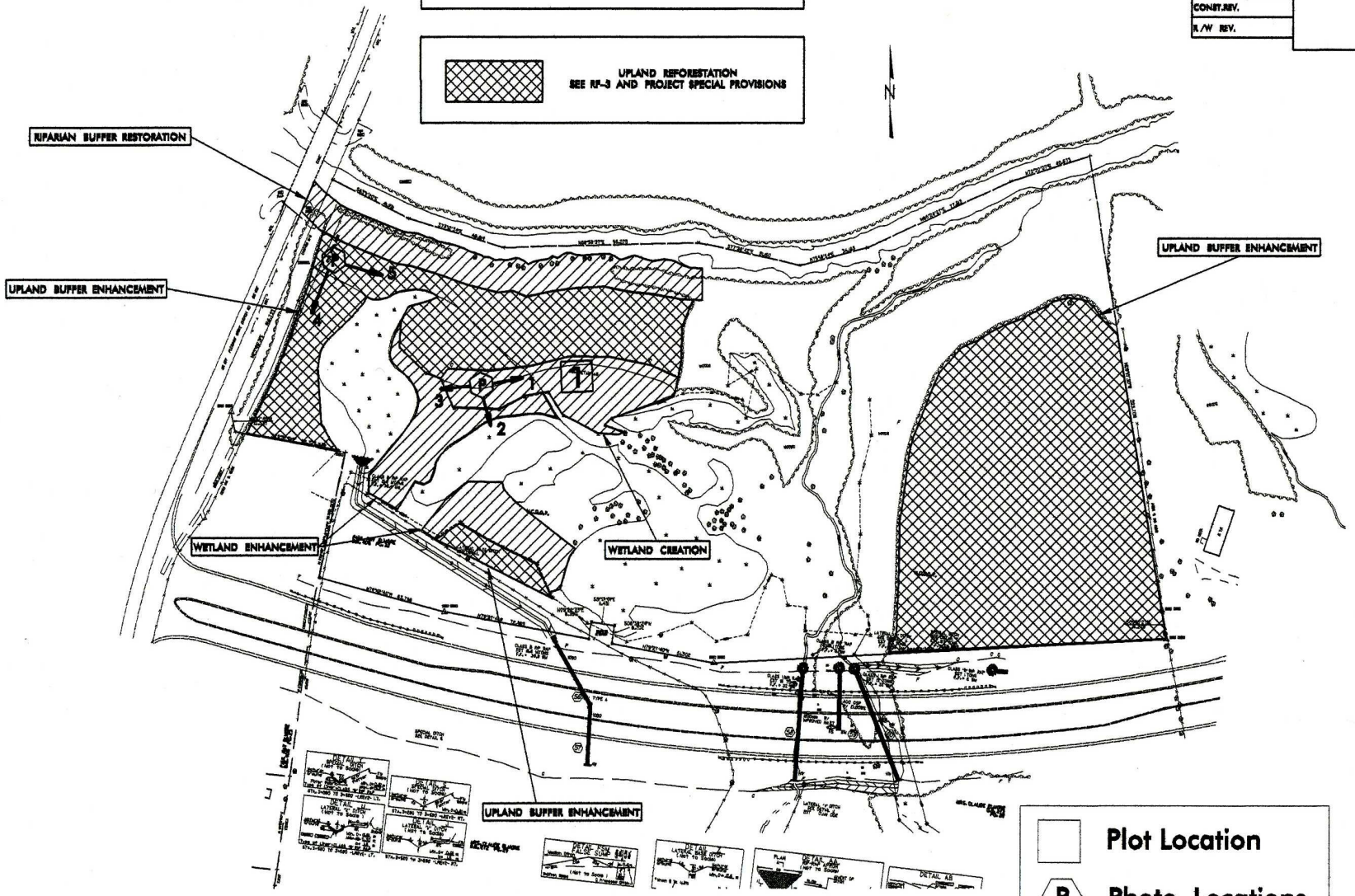
Photo 3

Photo 4

Photo 5

August 2009

INDIAN CREEK MITIGATION SITE



METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-0617BA	EC-25A/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	
R/W REV.	